

1 **DISK DRIVE PULSE WIDTH MODULATING A VOICE COIL MOTOR**
2 **USING MODEL REFERENCE CURRENT FEEDBACK**
3

4 **ABSTRACT OF THE DISCLOSURE**

5 A disk drive is disclosed comprising a voice coil motor (VCM) driven in a PWM mode
6 using model reference current feedback. The PWM circuitry and VCM form a plant transfer
7 function which varies with changes to the plant characteristics, such as the resistance of the voice
8 coil fluctuating with temperature drift. A plant model having a model transfer function generates
9 an estimated state of the VCM in response to a detected current flowing through the voice coil.
10 A correction block, responsive to the detected current, adjusts PWM timing signals so that the
11 plant transfer function substantially matches the model transfer function.